

M E M O R A N D U M

TO: File

FROM: ARTHUR V. MAY, Hydrological Engineer

SUBJECT: DIKE CONSTRUCTION IN LYDIAS CANYON, KANE COUNTY

On November 29, 1978 Ross Miller and I made a field examination of a spring referred to in his memorandum dated October 5, 1978.

Recent construction on the spring was as follows:

- 1) An earth mound had been built around the top of the four foot CMP and the natural head of the spring had risen to a point two or three feet above the surface of the pond.
- 2) A short length of 3" PVC had been installed through the pond.
- 3) The spring was "protected" by a piece of wire fencing--there were no fence posts.
- 4) Water was conveyed by a small ditch, through a succession of assorted plumbing, to the original 6" steel pipeline.

Ross contacted Mr. Cox who stated that he still wasn't satisfied with the water delivery system or with the flow.

As far as improving the system, there are several possibilities. First, a pipeline could be installed similarly to the drain pipe from the spring well to the existing 6 inch steel pipeline. With the inlet below the water level the system would be closed and would be fairly sanitary. A better fence would have to be built to keep animals out of the spring. This would be the minimum acceptable and should put the water flow and quality back to preconstruction conditions..

A better system would be to

- 1) Place a 3 foot CMP inside the existing 4 foot CMP. The 3 foot CMP should extend three or four feet above the top surface of the dike.
- 2) A six inch PVC pipe would then be connected at some level below the ground surface. This would a) protect the pipe from possible frost damage and from being disturbed, and b) allow the standpipe above the inlet to act as a reservoir.

- 3) An outlet or drain should be installed less than a foot below the maximum head developed by the spring
- 4) The annular space between the two CMPs should be filled with grout to strengthen the structure, and
- 5) A vented, locking cap should be installed to keep trash and animals out of the system. This would be removable to provide maintenance.

This system would provide considerably better service at a higher price than the first system. Due to this improvement in conditions, Mr. Cox should pay the difference in cost between the two system.

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